BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of

A La Carte and Themed Tier Programming and Pricing Options for Programming Distribution on Cable Television and Direct Broadcast Satellite Systems	)))))	MB Docket No. 04-207

COMMENTS OF INSIGHT COMMUNICATIONS COMPANY, INC.

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Summary

Insight concurs fully with the comments submitted in this proceeding by the National Cable & Telecommunications Association ("NCTA") and others that any governmentally-imposed a la carte requirement would harm consumers by reducing program diversity, would increase prices for consumers and would raise irresolvable constitutional problems. As discussed in Insight's comments below, an a la carte requirement would also pose a host of insurmountable technical, cost, operational and customer service impediments.

Any mandatory a la carte requirement that covers the enhanced basic tier analog channels would force Insight to select one of four wholly unacceptable options in order to enable the delivery of a customized mix to each subscriber:

1. Using a series of customized traps capable of blocking each of the channels on the analog expanded basic tier;

2. Deploying hybrid set-top boxes to each subscriber that can descramble both analog and digital channels;

3. Conversion to an all-digital platform; or

4. Simulcasting all of the basic and enhanced basic channels in analog and digital format.

Each of these four options is unacceptable from a technical standpoint.

The use of physical traps to segregate the analog enhanced basic tier channels that are desired by an a la carte customer from those that are not is not a workable option for several reasons. First, because traps are rudimentary in nature, it likely would be technically impossible to adequately deliver selective individual channels when those channels are interlaced with unwanted channels on the system's channel lineup. Second, there is a physical and technological limit on the number of traps that can be used in any given situation – attaching more than four or five traps on a single aerial installation can cause safety, mechanical and electrical problems. Third, the use of traps raises unacceptable signal quality and signal leakage issues. Fourth, the

customer service costs involved with the trap approach would be enormous. Finally, the widespread use of traps is unacceptable because it is the least effective signal security technique.

The second alternative would be to deploy hybrid analog and digital addressable set-top boxes that allow a la carte customers the ability to receive only those specific analog enhanced basic channels they have selected, while at the same time allowing them to continue to have the ability to receive digital services. This would require all enhanced basic channels to be encrypted, and the use of set-top boxes with analog descrambling technology to deliver only those specific analog channels requested by a particular subscriber. Unfortunately, set-top boxes with analog descrambling technology of any sort are no longer manufactured by or available from the major set-top box manufacturers. Indeed, the most important component, the integrated circuit devices used to segregate and descramble analog signals, have been discontinued by all major suppliers. Thus, the deployment of this approach would require further design, investment and manufacturing commitments from set-top manufacturers and cable operators.

The use of hybrid addressable set-top boxes would also be problematic since analog descrambling technology is widely considered to be obsolete, and major set-top suppliers will not easily commit to re-tool in order to resume the manufacture of addressable analog set-up boxes. Further, given the investment from the industry that would be required to redeploy outdated analog technology, combined with the sophistication that would be necessary to be built into the boxes in order to selectively segregate hundreds of different analog and digital channels, such boxes would undoubtedly become inordinately expensive. Indeed, the cost to install such boxes would be prohibitive -- each customer ordering a la carte service would require both a box on each TV set within its residence and an installation truck roll by a service technician each time a TV set and set-top box is hooked up to the system.

The third approach would involve the conversion of all analog services carried on enhanced basic tiers to digital for transmission to all customers. This would require all customers to obtain and install new addressable digital set-top boxes on every TV set connected to cable in each subscriber's home, as well as the encryption of all channels currently offered on the enhanced basic tier. Given Insight's cost of approximately $200 per set-top box, conversion to all digital would require a capital expenditure of approximately $560 million for set-top boxes alone. NCTA estimates that the industry-wide set-top box costs under this scenario would reach $33.8 billion. Insight estimates that the net cost to accomplish the necessary changes at the typical headend is a minimum of $13,000 per channel per headend. For a typical 45 analog channel expanded basic tier offered by Insight, this would result in an additional cost of at least $585,000.

The final approach would be to allow non a la carte customers the option to continue to receive analog only basic and enhanced basic service tiers, while at the same time implementing a digital simulcast of those same signals, allowing customers to elect to receive enhanced basic programming services digitally on an a la carte basis. As in the hybrid and all digital scenarios, every customer electing a la carte would then need a digital addressable set-top box for every television in his or her home. The set-top costs associated with such a solution would ultimately depend on the number of customers electing to receive their services a la carte, but would cost Insight a minimum of $200 per box, and would result in an increase in the subscriber's bill of approximately $8 per month, per box -- and about $13 per month for boxes with high definition and digital video recorder capabilities. A simulcast approach would also be unacceptable in that it would constitute a massive waste of bandwidth, limiting a cable operator's ability to offer innovative non-basic services including digital programming, HDTV, video-on-demand, high-

speed cable Internet, circuit-switched telephony, and Insight is actively exploring exciting future uses such as VoIP.

Any scenario to create mini-tiers would involve some variation or combination of the foregoing options, and either traps and/or digital set-top boxes would be needed to create and support the mini-tiers. As such, each would present the same types of technical difficulties and costs as their respective counterparts under a full-blown a la carte approach.

In addition to the insurmountable technical issues outlined above, imposition of a governmentally-mandated a la carte policy would impose significant operational burdens that would unnecessarily drive up cable operators' costs while adversely affecting customer service and satisfaction. For example, in order to induce customers to subscribe to cable networks on a channel by channel basis, Herculean efforts would be necessary to raise customers' knowledge regarding each of the hundreds of analog channels offered by the typical cable system. It would thus be virtually impossible to effectively market hundreds of separate video programming services for subscription on an a la carte basis.

An a la carte approach would also impose additional customer care costs on cable operators and subscribers alike, and would inevitably lead to reduced levels of customer service and subscriber satisfaction. Moreover, no known cable billing software is presently capable of recording constant changes in a customer's services and charges, and even if such software could be created, the resulting billing statements would be unintelligible to the average subscriber. The disputes engendered by the complexity of a la carte billing statements are also likely to increase the incidence of uncollectible charges or outright cancellation of service, which again diminishes the cable operator's revenue and results in higher costs for all remaining customers.

For these reasons, as well as the compelling reasons detailed by NCTA and others in this proceeding, it is evident that a la carte is neither feasible nor desirable and, in fact, would cause significant harm to programmers, cable operators, and consumers alike.

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INSIGHT COMMUNICATIONS COMPANY, INC.

Insight Communications Company, Inc. ("Insight"), by its attorneys, hereby submits these comments in response to the Public Notice issued by the Chief, Media Bureau in this matter on May 25, 2004.[1] For the following reasons, imposition of a mandatory a la carte requirement that covers all of a cable operator's basic and enhanced basic channels would be fraught with overwhelming technical and operational difficulties.

I. Background

Insight is the 9th-largest cable operator in the U.S., with 1.4 million customers in the states of Illinois, Indiana, Kentucky and Ohio. Insight has recently upgraded its broadband network in order to provide significant increased capacity and flexibility in offering its customers a broad array of services. Approximately 96% of Insight's customers are now passed by Insight's upgraded network, with a bandwidth capacity of 750 megahertz (MHz) or greater, allowing Insight to be at the forefront of the cable industry in delivering leading-edge technology to its customers - including digital video, high-speed internet, HDTV, DVR (Digital Video Recorder) and digital phone service. At the end of 2003, digital cable was available to 96% of

[1] DA 04-1457.

basic customers passed by Insight's broadband network, high-speed Internet was available to 96% of homes passed and telephone was available to 30% of homes passed.

Insight also offers its customers traditional cable television services and programming offerings. Insight tailors both its basic line-up and its additional channel offerings to each regional system in response to demographics, programming preferences, competition and local regulation. Insight offers a basic level of service which includes up to 25 channels of television programming, including all "must-carry" local broadcast channels. As of December 31, 2003, approximately 91% of Insight's customers chose to pay an additional amount to receive additional channels under Insight's "Classic" or "expanded" service. Insight's analog cable television service offering includes the following:

- Basic Service. All of Insight's customers receive the basic level of service, which generally consists of local broadcast television and local community programming, including government and public access, and may include a limited number of satellite channels.

- Classic Service or Expanded Service. This expanded level of service includes a group of satellite-delivered or non-broadcast channels such as ESPN, CNN, Discovery Channel and Lifetime.

- Premium Channels. These channels provide unedited, commercial-free movies, sports and other special event entertainment programming such as HBO, Cinemax, Starz! and Showtime. Insight offers subscriptions to these channels primarily as a multi-channel digital service, along with subscription video-on-demand services.

- Pay-Per-View. These analog channels allow customers with addressable analog or digital set top boxes to pay to view a one-time special sporting event or music concert on an unedited, commercial-free basis. Pay-per-view movies also are available through Insight's video-on-demand digital service.

The implementation of interactive digital technology significantly enhances and expands the video and service offerings Insight provides to its customers. Because of the significantly increased bandwidth and two-way transmission capability of Insight's state-of-the-art technical platform, Insight has deployed a more extensive digital product that is rich in program offerings

and highly interactive with Insight's customers. Insight's interactive digital service is designed to maximize the advantages of a broadband network in the existing generation of set-top devices. The digital service includes three interactive applications: (1) an interactive program guide; (2) interactive local information and community guides; and (3) a video-on-demand service.

II. Insight agrees with NCTA's Comments

Insight concurs fully with the comments submitted in this proceeding by the National Cable & Telecommunications Association ("NCTA"). In particular, Insight agrees that any governmentally-imposed a la carte requirement would harm consumers in several ways:

- Mandatory a la carte would reduce program diversity. The marketplace-driven business model employed by the cable industry -- whereby most programming services are supported by a dual revenue stream from both advertising and subscription fees -- has resulted in unprecedented programming diversity for the U.S. television viewer. A la carte would decrease both advertising and subscription fees derived by many programmers, rendering it virtually impossible for the creation of new cable networks seeking to serve niche audiences. Indeed, the financial viability of many existing cable networks would undoubtedly be jeopardized by an a la carte approach.

- Mandatory a la carte would increase prices for consumers. Advertising revenues are keyed to audience size. An a la carte channel will not be able to derive as much advertising revenue as a channel offered on a highly penetrated tier. Such lost revenues can be recouped only through increased subscription fees, which would result in higher cable bills for consumers.

- A la carte is not a viable business model. Experience in Canada, as well as in the United States with regard to services that began as a la carte but later switched to expanded basic (*e.g.*, Disney Channel, Golf Channel), shows that consumers prefer the convenience, value and diversity that flows from the existing business model, whereby most services packaged together in large tiers.

- Mandatory a la carte poses serious constitutional questions. Particularly if the government seeks to require the availability of a smaller "family tier," it would put the government in the untenable position of reviewing which services might qualify as family friendly, an inherently content-based process.

In sum, Insight agrees with NCTA that there are numerous policy and legal reasons not to adopt a mandatory a la carte approach. Insight will focus the remainder of its comments on the many technical and operational problems that render mandatory a la carte an unworkable approach. In support of the technical information, factual statements and cost estimates contained herein regarding Insight, attached as Exhibit A is a declaration from Charles Dietz, Insight's Senior Vice President and Chief Technology Officer. Mr. Dietz, a 30 year veteran of the cable industry, is an expert on the technical and operational aspects of cable systems. In addition, to provide perspective on how Insight's figures relate to industry-wide data and estimates, Insight is also attaching as Exhibit B a declaration from Andy Scott, Senior Director of Engineering at the National Cable and Telecommunications Association, Inc. ("NCTA").

III. Any mandatory a la carte service requirement is unfeasible from a technical standpoint.

Insight assumes that any proposals for a mandatory a la carte regime would exclude the basic level of service and that all basic channels could continue to be delivered "in-the-clear" (*i.e.*, unencrypted) in analog format. Indeed, absent an amendment to the Communications Act, all must-carry broadcast channels must be delivered together as part of the basic service -- a la carte is simply not an option.[2] Insight also recognizes, for those customers currently equipped with digital set-top boxes, the digital platform provides the technology whereby a limited number of channels offered on digital tiers might be made available on an a la carte basis. Indeed, Insight and other cable operators continue to experiment with creative marketing, packaging and pricing concepts, such as video-on-demand and subscription video-on-demand, that take advantage of the unique flexibility inherent in digital technology. However, as explained in detail below, a requirement that all digital channels be provided on an a la carte basis, even if limited to those channels currently offered on digital tiers, would pose a host of insurmountable

[2] See 47 U.S.C. §§ 534(b)(7); 543(b)(7)(A).

technical, cost, operational and customer service impediments. These obstacles would be drastically compounded by a requirement that all analog channels currently offered on expanded basic tiers be converted to digital and offered on an a la carte basis.

Indeed, the primary focus of any misguided calls for the imposition of an a la carte requirement is the analog expanded basic tier, or "CPST." This is the service level that regularly obtains the highest level of subscribership and that contains the most popular services, both highly viewed channels such as TNT, TBS, ESPN, USA and Nickelodean, and niche audience services such as Style, Food Network and The Golf Channel, that might not remain viable in an a la carte environment. Expanded basic service offered by Insight and other cable operators typically consists entirely of analog channels offered in the clear. This allows the entire package to be received by any subscriber with a cable-ready set without installing a set-top box. Because expanded basic channels are typically offered in a contiguous frequency block, they can be secured from delivery to basic-only subscribers through a single band pass filter, or "trap." However, existing technology does not allow each individual channel on the expanded basic tier to be offered on an a la carte basis.

A mandatory a la carte requirement that covers the enhanced basic tier analog channels would force Insight to select one of four wholly unacceptable options in order to enable the delivery of a customized mix to each subscriber:

1. Using a series of customized traps capable of blocking each of the channels on the analog expanded basic tier;

2. Deploying hybrid set-top boxes to each subscriber that can descramble both analog and digital channels;

3. Conversion to an all-digital platform; or

4. Simulcasting all of the basic and enhanced basic channels in analog and digital format.

For the reasons detailed below, each of these four options is unacceptable from a technical standpoint.

A. Using traps on the analog channels is not a workable option.

The most rudimentary a la carte technology would be to use physical traps to segregate the analog enhanced basic tier channels that are desired by an a la carte customer from those that are not. Traps are physical devices that are used to filter out the radio frequency signal of unwanted analog channels. Traps have been used by cable operators for decades as a means to exclude unwanted channels (i.e., premium channels not subscribed to on an all-analog system) from a subscriber's channel lineup.[3] Traps are installed in sequence on the cable wiring leading to a subscriber's home (the "drop") and a separate trap is generally needed for each channel to be blocked. Theoretically, via the use of multiple traps on each drop (one for each channel to be excluded), an a la carte mandate could be implemented.[4] But from a practical and cost standpoint, traps are not a workable option.

First, traps have significant technical limitations. Because they are rudimentary in nature, it is difficult to restrict the impact of traps to just one channel. It is not uncommon, particularly as traps drift with age, for the lower adjacent channel's audio signal to be attenuated, causing problems with stereo reception, or in more severe cases, monaural audio reception. Depending on where particular channels are located and which particular channels are selected by an a la carte customer, it may be impossible to adequately deliver selective individual channels when those channels are interlaced with unwanted channels on the system's channel lineup.

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[3] Insight still uses traps on some of its systems to exclude a limited number of analog premium channels (HBO, Showtime) from the lineups of its analog basic-only customers who do not subscribe to those premium channels.

[4] Note that by using traps in this manner, every TV set in a customer's home would receive the same set of only those signals that the customer has chosen to receive, thereby precluding a customer from receiving different set of channels on different TV sets within the home.

Second, there is a physical and technological limit on the number of traps that can be used in any given situation.[5] Most traps are constructed primarily of metal and are about 1 inch in diameter and about 2-3 inches long. On a typical aerial installation, traps are deployed in sequence right after the tap (the point on the pole where the subscriber's drop is connected to the common feeder distribution cable). Attaching more than four or five traps on a single aerial installation can cause safety, mechanical and electrical problems. In addition to the cluster of traps, the tap as well as the cable and pole structure to which they are affixed can become easily subject to damage. Even when a special bracket is used to minimize such damage, and to maintain the proper safety spacing between wires installed on poles as well as to comply with electrical codes and/or agreements with pole owners, there are still limits on the number of traps and brackets given that usable space and load capacity on any pole is limited.

There are similar drawbacks to the use of traps in cable systems with underground wiring or in multi-dwelling units. In those situations, traps must be installed in a pedestal or junction box near the customer's premises and attached in a secure manner so as to protect system security. But because there is almost always limited space in these housings, only a finite number of traps can be located inside the remaining space.[6] This precludes the use of traps where a subscriber desires that more than four or five channels be excluded from the expanded basic lineup. While new larger pedestals or boxes could be installed, this would cost several hundred dollars per installation and raise innumerable customer satisfaction, land use and aesthetic concerns.

Third, the use of traps raises unacceptable signal quality issues. The attachment in sequence of multiple traps will often cause significant increases in signal loss from the

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[5] See Scott affidavit at ¶ 9.c, attached as Exhibit B.

[6] Id. at ¶ 9.c.

customer's service drop resulting in a degradation of overall video and audio quality of the analog channels.[7] The level of signal loss as more traps are installed also tends to bring the cable system out of compliance with Commission regulations governing signal level, which in turn can adversely affect picture quality.[8] The system may leak RF energy and cause unwanted or dangerous interference with other telecommunications services and aeronautical frequencies.[9] Due to temperature fluctuations, moisture and physical exposure, traps also have a limited life span (typically five years) and thus must be routinely inspected and, if necessary, replaced so as not to disrupt transmissions and communications that were not intended to be affected.[10] For these reasons, any expanded use of traps would require continuous monitoring and greatly increase system maintenance burdens and expense.

In theory, signal losses resulting from multiple traps might be remedied with amplifiers or higher tap output levels. Achieving higher tap levels would require an inordinately expensive plant redesign, affecting total amplifier cascades and overall system performance. Similarly, installing additional amplifiers is problematic because they may oscillate, add noise, or distort the signal if overloaded. Indeed, one of the key benefits of the $85 billion investment by the cable industry to upgrade to a hybrid fiber/coax architecture was to minimize the cascading of amplifiers -- a benefit that would be lost if installation of multiple traps requires additional amplifiers. Moreover, if amplifiers are installed after the tap, then they would need to be installed before the traps. This would necessitate powering the amplifiers from the plant, which would require extensive and costly redesign of all existing powering. Without knowing how many customers would require an amplifier to support the number of a la carte channels selected

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[7] Id. at ¶ 9.b.

[8] 47 C.F.R. § 76.614.

[9] See Scott affidavit at ¶ 9.c, attached as Exhibit B.

[10] Id. at ¶ 9.b.

at any given time, it would be impossible to predict the precise level of additional powering that might be required at a particular location.

Fourth, the customer service costs involved with the trap approach would be enormous. With approximately 45 channels or more on a typical Insight analog expanded basic tier, each a la carte installation would require a highly customized set of traps to allow customers to choose to include and/or exclude specific services from their channel lineup. Because standard traps are designed to exclude only one channel from the lineup, a single customer could theoretically require the installation of dozens of separate devices, with thousands of variations for each and every customer.[11] As a la carte would be available to each of Insight's customer, this situation could apply 1.3 million separate times. While it is possible to design a custom trap that covers multiple channels, this would only add to the complexity of the problem because few a la carte customers are likely to order the exact same mix of channels.

Each time a trap is installed or removed to custom-tailor the lineup to the customer's current desires, the system would have to send a costly truck roll by a service technician to reconfigure the channel lineup by changing out traps. Insight's average cost per truck roll is $50, and it is safe to assume that a truck roll to change out a trap and to make sure that a customer is getting precisely those channels, and only those channels, that are desired would cost at least that much, particularly in light of the fact that many service calls to alter trap configuration would require a more time-consuming aerial installation by accessing the pole using a ladder or bucket truck.[12] Because of the inevitable increase in service calls due to the number of potential custom installations and the thousands of variations of the many traps that might have to be used for

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[11] Id. at ¶ 9.f.

[12] This figure is in line with the industry consensus on the average cost of each service technician truck roll to install and/or service traps on a customer drop. Id. ¶ 9.g.

each, combined with the number of times a customer might request a change in their service mix, Insight would have to hire and train hundreds of new service technicians.

Finally, the widespread use of traps is unacceptable because it is perhaps the least effective signal security technique.[13] Because traps simply filter out the signals not being paid for by a particular customer, the removal of the trap allows unauthorized signals to pass through. For this reason, traps are typically installed on utility poles or in metal pedestals to deter tampering, but even these measures are not fool proof. An a la carte approach reliant on traps would result in theft of service becoming even more pervasive and difficult to prevent. For all of the foregoing reasons, an a la carte approach using traps is simply not feasible.

B. Using hybrid analog/digital set-top boxes is not a workable option.

The second alternative to offer enhanced basic channels on an a la carte basic would be to deploy hybrid analog and digital addressable set-top boxes that allow a la carte customers the ability to receive only those specific analog enhanced basic channels they have selected, while at the same time allowing them to continue to have the ability to receive digital services. This would require all enhanced basic channels to be encrypted, and the use of set-top boxes with analog descrambling technology to deliver only those specific analog channels requested by a particular subscriber. Unfortunately, set-top boxes with analog descrambling technology of any sort are no longer manufactured by or available from the major set-top box manufacturers.[14] Indeed, the most important component, the integrated circuit devices used to segregate and descramble analog signals, have been discontinued by all major suppliers. Thus, the deployment

[13] Id. at ¶ 9.d.

[14] While Insight does have some subscribers with legacy analog addressable set-top boxes (i.e., used as conditional access devices for no more than a handful of analog channels on each system), Insight is generally not offering new addressable analog boxes to its customers.

of this approach would require further design, investment and manufacturing commitments from set-top manufacturers and cable operators.

The use of hybrid addressable set-top boxes would also be problematic since analog descrambling technology is widely considered to be obsolete, and major set-top suppliers will not easily commit to re-tool in order to resume the manufacture of addressable analog set-up boxes.[15] Indeed, there is a widespread industry consensus that system security is too readily compromised by the use of boxes with analog descrambling, allowing piracy of premium and pay-per-view programming. Further, given the investment from the industry that would be required to redeploy outdated analog technology, combined with the sophistication that would be necessary to be built into the boxes in order to selectively segregate hundreds of different analog and digital channels, such boxes would undoubtedly become inordinately expensive.

Even if such boxes were readily available, the cost to install them would also be prohibitive -- each customer ordering a la carte service would require both a box on each TV set within its residence and an installation truck roll by a service technician each time a TV set and set-top box is hooked up to the system. Insight estimates this would cost a minimum of $50 per visit for a single set installation, and an additional $20 per set for a multiple set installation.[16] Insight does not believe that such additional costs will be acceptable to its customers.

In making any changes to the manner in which programming is packaged or delivered, Insight also must respect the fact that a large number of its customers continue to choose only to receive basic and enhanced basic programming in analog format without the use of any set-top boxes. These customers will not appreciate any major disruptions in the available analog programming services on the basic tiers or their channel lineups. Indeed, Insight does not

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[15] See Scott affidavit at ¶ 10.a, attached as Exhibit B.

[16] Again, these figures are consistent with industry estimates of the costs of a service technician truck roll. Id. at ¶ 9.g.

foresee any scenario, whether by company marketing or due to a shift in regulation or law, that would rapidly change these customers' preferences in this regard. As such, any a la carte requirement that forces subscribers to install (and pay for) unwanted set-top boxes is likely to cause considerable frustration, dissatisfaction and even termination of cable service by existing customers.

C. All digital transmission is not a workable option.

The third approach would involve the conversion of all analog services carried on enhanced basic tiers to digital for transmission to all customers. This would require all customers to obtain and install new addressable digital set-top boxes on every TV set connected to cable in each subscriber's home.[17] Conversion to all-digital transmission would require the encryption of all channels currently offered on the enhanced basic tier. Hence, those customers who receive the entire enhanced basic package today, without a set-top box, would require a digital set-top box on each set in their homes just to continue receiving the same services, even if they have absolutely no desire to order any such channels on an a la carte basis.

Approximately 66.5% of Insight's 1.4 million customers, or a total of 931,000 do not have digital set-top boxes today.[18] Using NCTA's estimate of approximately 2.5 television sets per household,[19] these customers would require approximately 2,327,500 set-top boxes. And even the 469,000 Insight customers currently equipped with digital boxes probably have at least one set in their home used to receive enhanced basic without a set-top box, bringing the total number of boxes required to 2,796,500. Given Insight's cost of approximately $200 per set-top

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[17] Id. at ¶ 10.c.1.

[18] This percentage is consistent with industry-wide estimates which peg digital service penetration at around 32% (22.9 million of 71 million cable subscribers nationwide). Id. at ¶ 5.

[19] Id. at ¶ 10.c.2.

box,[20] conversion to all digital would require a capital expenditure by Insight of approximately $560 million for set-top boxes alone. Indeed, this is probably a conservative estimate because at least some VCRs in each home might also require a set-top box. NCTA estimates that the industry-wide set-top box costs under this scenario would reach $33.8 billion.[21] This approach is also estimated to add at least 15 minutes to the service technician's time required to perform each installation, imposing additional costs that ultimately must be recouped from subscribers.

Conversion of all enhanced basic services from analog to digital would also necessitate significant equipment upgrades at each of Insight's cable headends. Every channel moved from the expanded analog basic tier to the digital tier would need its own digital encoder ($10,000 each) to digitize or convert the signal from analog to digital, except for analog channels that already provide digital feeds via satellite to Insight. Additional multiplexers and QAM modulators also would be needed to ensure that the services can be distributed digitally over the cable system. Ad insertion equipment would have to be upgraded for each digital channel that carries local spots. Furthermore, new set top box controller hardware and software, return path receiving equipment, and other upgrades would be necessary to support the increase in the number of set-top boxes that would be deployed. The physical amount of additional equipment would be considerable, and each of Insight's headends would probably need to construct additional building floor space, electrical power, and heating and air conditioning to accommodate this new equipment. Insight estimates that the net cost to accomplish these changes at the typical headend is a minimum of $13,000 per channel per headend. For a typical

[20] This figure is consistent with industry average costs for a digital set-top box. Id.

[21] Id.

45 analog channel expanded basic tier offered by Insight, this would result in an additional cost of at least $585,000.[22]

Encrypted digital transmission of all enhanced basic channels would also exacerbate consumer electronics compatibility problems. The Commission's equipment capability rules are designed to ensure that the features of cable customer's analog reception equipment and TV sets work with modern cable systems.[23] The all digital solution would require almost every TV set to have a set-top box for descrambling and tuning the set, eliminating the intended role of customer's analog cable-ready designated TVs.[24]

D. Analog/digital simulcast of the basic and enhanced basic tiers is not a workable option.

The final approach would be to allow non a la carte customers the option to continue to receive analog only basic and enhanced basic service tiers, while at the same time implementing a digital simulcast of those same signals, allowing customers to elect to receive enhanced basic programming services digitally on an a la carte basis. As in the hybrid and all digital scenarios discussed above in subsections B and C, every customer electing a la carte would then need a digital addressable set-top box for every television in his or her home. The set-top costs associated with such a solution would ultimately depend on the number of customers electing to receive their services a la carte, but would cost Insight a minimum of $200 per box, and would result in an increase in the subscriber's bill of approximately $8 per month, per box -- and about $13 per month for boxes with high definition and digital video recorder capabilities.

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[22] The figures are consistent with NCTA's projection that such a solution would cost a 50 analog channel cable system at least $572,500 in headend costs to achieve such conversion to digital. Id. at ¶ 11.b.

[23] 47 C.F.R. § 76.630.

[24] 47 U.S.C. § 544A; 47 C.F.R. § 76.630(a).

Notwithstanding Insight's investment of approximately $420 million to upgrade its network to enable its cable systems to offer a wide range of digital services, all of Insight's systems still currently deliver the basic and enhanced basic tier channels via analog transmission. For many reasons, including that they desire not to have to use any set-top equipment or buy a digital cable-ready TV set, the remainder of Insight's subscribers continue to choose to take only analog basic and/or enhanced basic service. Indeed, only about 33.5% of Insight's customers have chosen to take digital services at this time and Insight's marketing research indicates that a sizable proportion of its customers will continue to choose this lower cost option. The upside of this approach is that it best respects the interests of these subscribers, as analog basic tier channels would remain unchanged on the system in order to continue to serve those non-a la carte customers who do not want a set-top box.

For a la carte customers, on the other hand, all the analog enhanced basic tier channels would be trapped out on an entire home basis. This would be accomplished by the use of a special wide band trap called band pass trap. Such traps would cost Insight around $6 each, a cost that would be added to the cost of each set-top box (around $200 per unit) and the cost of a truck roll by a service technician to install the trap and the set-top box, which Insight estimates to be at least $70 per installation.[25] Again, these additional costs, when multiplied by the thousands of customers that might select a la carte, make this configuration unacceptable.

A simulcast approach would also be unacceptable in that it would constitute a massive waste of bandwidth, limiting a cable operator's ability to offer innovative non-basic services.[26] In order to duplicate the analog basic tier on a digital tier, Insight would have to allocate additional spectrum on each of its systems. Insight generally uses this valuable spectrum for

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[25] Again, these figures are consistent with industry estimates of the costs of a service technician truck roll. See Scott affidavit at ¶ 10.d, attached as Exhibit B.

[26] Id. at ¶ 12.

other services including digital programming, HDTV, video-on-demand, high-speed cable Internet, circuit-switched telephony, and Insight is actively exploring exciting future uses such as VoIP. In a typical Insight system with 45 analog expanded basic channels, using 12:1 digital compression, at least an additional 24 MHz would have to be reallocated for digital duplication of analog signals, and thus would become unavailable for innovative, advanced broadband services. Along with all other major MSOs, Insight has invested millions of dollars to upgrade and expand its plant so that it can provide these innovative digital offerings to consumers. It would be an enormous waste to delay or reverse deployment of such services in order to duplicate analog programming that consumers can already receive.

E. Because the technical difficulties are similar, mini-tiers are also unworkable.

While somewhat less severe, the technical difficulties and cost issues associated with a mini-tier requirement make this option equally unacceptable.[27] In theory, mini-tier offerings could be created by grouping together smaller packages of select channels in the existing expanded basic tier. There are three basic approaches to how a mini-tier could be created: (1) create the mini-tier with all-analog channels, (2) create a mini-tier using a combination of analog and digital channels, or (3) create the tier with all-digital channels. Any other scenario to create a mini-tier would be some variation or combination of these three. In essence, each of these three approaches is a scaled down, albeit still costly, adaptation of the a la carte scenarios discussed above. In each, either traps and/or digital set-top boxes would be needed to create and support the mini-tiers. As such, each would present the same type of technical difficulties and costs as their respective a la carte analog, albeit perhaps to a slightly lesser degree.

For example, if mini-tiers are created from analog channels within the expanded basic tier, then traps would have to be used. While this option saves the customer from needing a set-

[27] Id. at ¶ 15.

top box in order to receive the mini-tiers comprised of only analog channels, the extensive use of traps that would be necessary (just as with the use of traps in the a la carte scenario discussed above) to implement this solution would pose numerous irresolvable technical and operational problems for cable systems and their customers. Furthermore, because channels that might constitute a mini-tier are not always grouped together consecutively, a cable operator would likely have to use many more traps than safety and prudence would allow. And just as with a la carte, each TV set in the home would have to receive the exact same mix of channels and tiers, a result that is not likely to sit well with most customers, and indeed might undermine one of the justifications for creation of a "family" mini-tier.

Alternatively, mini-tiers could be created via a mix of analog channels and digital channels. Traps would again be used to ensure the cable customer receives only the analog channels contained within the mini-tier they are authorized to receive and the customer would have to use a digital set-top box in order to receive the digital channels contained within the mini-tier. Just as with the hybrid a la carte scenario, the use of traps will result in a number of technical problems and an a la carte customer will be forced to use a digital set-top box on every TV set within the house in order to receive all the channels contained in their mini-tier. This will also significantly increase the number of set-top boxes the cable operator must make available in its system and would result in further equipment charges for the customer. Headend costs, while somewhat less than those in a pure a la carte scenario due to the smaller number of channels that will need to be duplicated in the digital tier, would still be significant.

Finally, a cable operator could offer mini-tiers comprised of only digital channels and avoid the use of traps altogether. Due the large base of analog only customers, existing analog channels required to be in the mini-tier would have to be duplicated in the digital tier. As was explained in the discussion concerning the digital a la carte scenario, this approach would result

in a significant increase in equipment and maintenance costs, and again would require the cable customer to use a digital set-top box on every outlet in the home, which as described above will be unacceptable to many of Insight's customers. The cost to deploy set-top boxes to all customers' televisions to support mini-tiers would be effectively the same as outlined in the digital a la carte sections above.

IV. Operational burdens render mandatory a la carte unworkable.

In addition to the insurmountable technical issues outlined above, imposition of a governmentally-mandated a la carte policy would impose significant operational burdens that would unnecessarily drive up cable operators' costs while adversely affecting customer service and satisfaction.

A. A la carte channels would be impossible to market effectively.

An a la carte approach would create a marketing nightmare. To induce customers to subscribe to cable networks on a channel-by-channel basis, Herculean efforts would be necessary to raise customers' knowledge regarding each of the hundreds of analog channels offered by the typical cable system. Unfortunately, the result of even the most aggressive and pervasive marketing campaign would be to merely increase customer confusion.

The most effective cable marketing campaigns often emphasize the fact that for a single package price, cable subscribers can receive hundreds of channels with programming options to satisfy every conceivable taste, interest and age group. While every channel may not appeal to every subscriber, cable television has been remarkably successful because it is selling choice -- the ability to select among hundreds of programming options 24 hours a day, 7 days a week. It would be virtually impossible to effectively market hundreds of separate video programming services for subscription on an a la carte basis. Indeed, it would probably be impossible to design a marketing campaign that would enable the typical consumer, without the benefit of the

on-screen programming guide typically supplied by the cable operator, to even name more than a handful of the hundreds of channels offered by cable, let alone create sufficient demand to drive acceptable subscription levels for each individual channel offered on an a la carte basis.

An a la carte approach would also create insurmountable impediments to the establishment of convenient and readily marketable price points. DBS enjoys a significant marketing advantage over cable operators in that DBS can establish uniform, nationwide package prices, thereby enabling ubiquitous marketing through a variety of broadcast, print and other media with national distribution. An a la carte approach could conceivably require separate retail prices for each channel offered, thereby thwarting any nationwide advertising campaign featuring prices. Local marketing efforts would be similarly constrained, given the inherent difficulties in effectively establishing a public awareness of the hundreds of separate price points that might be necessitated by a la carte offerings.

B. A la carte would adversely impact customer service.

An a la carte approach would undoubtedly precipitate massive customer confusion, thereby imposing untenable burdens on the customer service operations of Insight and other cable operators. Additional customer service representatives ("CSRs") would have to be hired to respond to the chaos resulting from a la carte. For example, CSRs would require more time per call to explain options, prices and reasons for the change from the prior model. Indeed, while processing a customer's order for cable service is a relatively simple process today, with an a la carte regime, it might take the CSR thirty minutes or longer to make sure that the customer fully understands all the available programming channels and prices in order to correctly process each call requesting initiation of, or changes in, cable service. CSRs would require more training to understand the a la carte approach and the continuous changes in the potentially infinite price point permutations. Moreover, it would take more time for cable technicians to install and

explain a la carte service to new subscribers, thereby requiring additional personnel to address this situation as well. Customer complaints would likely increase, particularly as confusion proliferates from the unduly complex subscriber bills and marketing materials necessitated by a la carte.

The tiered service offering model employed by the cable industry facilitates prompt and efficient customer service. With a relatively fixed and stable menu of service options, a CSR is typically able to process a subscriber's order (including upgrades or downgrades) with a simple touch of a computer screen that displays the available packages. An a la carte environment would entail hundreds, if not thousands, of service permutations, imposing a volume level and complexity that existing order-taking systems are simply incapable of processing.

Cable operators currently receive literally millions of telephone calls per year from customers seeking to initiate or alter their service packages. Mandatory a la carte would result in a substantial increase in the number and duration of calls handled by CSRs. NCTA estimates that an average monthly call-in rate for video products may be as much as 30%.[28] Based on Insight's 1.4 million customers, this equates to an annual call volume of 5.04 million calls. If the launch of a la carte results in an annual call volume increase of just 25%, Insight would be faced with an incremental call volume of 1,260,000 calls in the first year of a la carte availability. Given an average time per call of up to six minutes, and a call cost per minute of approximately $0.70, the annual incremental customer service costs incurred by Insight would total $5.3 million. Indeed, this estimate is conservative because the CSR is likely to spend more than six minutes with an a la carte customer explaining the numerous service options.[29]

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[28] Id. at ¶ 13.b.

[29] Id. at ¶ 13.b.

In addition to the increased personnel costs that would result from mandatory a la carte, Insight and other cable operators would be required to upgrade their call centers and telephone systems to handle the massive influx of inquiries and complaints relating to a la carte. Indeed, some cable operators might be unable to meet various customer service performance metrics, such as minimum telephone answer time, maximum hold time and busy signal limits. See 47 C.F.R. § 76.309(c)(1)(ii), (iv). These criteria are incorporated into certain cable franchises, which could lead to potential enforcement proceedings and sanctions by local franchising authorities.

In short, a mandatory a la carte approach would impose additional customer care costs on cable operators and subscribers alike, and would inevitably lead to reduced levels of customer service and subscriber satisfaction.

C. A la carte would produce virtually incomprehensible customer bills.

Pursuant to Section 76.1619(a) of the Commission's Rules, cable "bills must be clear, concise and understandable."[30] In addition, cable bills "must be fully itemized." Imposition of mandatory a la carte would make it virtually impossible to satisfy these obligations.

For an a la carte customer, the typical bill could balloon to several pages with itemized listings of each channel received and the associated fees. Cable bills would no longer be "clear, concise and understandable," but rather would become confusing and unwieldy. Paper and postage costs would skyrocket. Moreover, billing systems and software would require substantial overhaul, if not total replacement, to handle a la carte.[31] For example, the typical billing software only contains a limited number of "fields" to account for service packages and

[30] 47 C.F.R. § 76.1619 (a).

[31] See Scott affidavit at ¶ 14, attached as Exhibit B.

prices, and thus lacks the capacity to produce billing records and statements reflecting potentially hundreds of different a la carte channels and price points.

An a la carte regime would inevitably lead to a dramatic increase in billing disputes as subscriber bills become more voluminous and obtuse. For example, consider the billing headaches associated with service level upgrades and downgrades. Currently, cable subscribers are billed in advance, so when the customer elects to downgrade service, it is relatively simple to provide a pro rata refund covering the portion of the month after the downgrade. An a la carte approach would likely require wholesale changes to this consumer-friendly policy. For example, some subscribers might seek to "game" the a la carte approach by subscribing to a service only when a particular program is scheduled -- such as a live sporting event -- and then cancel the service the next day. Cable operators might be forced to impose 30-day minimum charges or downgrade fees in response to such practices. Moreover, no known cable billing software is presently capable of recording constant changes in a customer's services and charges, and even if such software could be created, the resulting billing statements would be unintelligible to the average subscriber. The disputes engendered by the complexity of a la carte billing statements are also likely to increase the incidence of uncollectible charges or outright cancellation of service, which again diminishes the cable operator's revenue and results in higher costs for all remaining customers.

Conclusion

As demonstrated in detail above, imposition of a mandatory a la carte requirement that covers all of a cable operator's basic and enhanced basic channels would be fraught with overwhelming technical and operational difficulties. For these reasons, as well as the compelling evidence submitted by NCTA and others in this proceeding, it is evident that a la carte is neither feasible nor desirable and, in fact, would cause significant harm to programmers, cable operators,

and consumers alike. An a la carte pricing model would reduce program diversity and increase prices for consumers. The current tiering model is regulated in the marketplace through the healthy interplay of the sometimes divergent incentives of programmers and cable operators. This business model has served consumers well, producing an abundance of programming diversity at a tremendous value to consumers. There is no basis for a governmentally mandated a la carte model that is entirely unproven and would result in substantial harm to the public.

Respectfully submitted,

Insight Communications Company, Inc.

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Its Attorneys

Dated: July 15, 2004
165818_3

EXHIBIT A

DECLARATION

I, Charles Dietz, do hereby declare and state under penalty of perjury as follows:

1. I am the Senior Vice President and Chief Technology Officer for Insight Communications Company, Inc. ("Insight"). In this role, I am responsible for the oversight of the technical aspects of the operation of Insight's cable systems;

2. I have served in similar technical roles in the cable industry for over 30 years; and

3. I have read the foregoing Comments to be submitted by Insight in the Federal Communications Commission's proceeding titled "A La Carte and Themed Tier Programming and Pricing Options for Programming Distribution on Cable Television and Direct Broadcast Satellite Systems - MB Docket No. 04-207." I have also reviewed the technical information and cost estimates contained within these Comments and I believe such technical information and cost estimates to be true and correct to the best of my personal knowledge, information and belief.

July 12, 2004
DATE

Charles Dietz

166162.1

EXHIBIT B

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
A La Carte and Themed Programming	)	MB Docket No. 04-207
and Pricing Options for Programming	)	
Distribution on Cable Television and	)	
Direct Broadcast Satellite Systems	)	

DECLARATION OF ANDY SCOTT
SENIOR DIRECTOR OF ENGINEERING, NCTA

1. My name is Andy Scott and I am Senior Director of Engineering in the Science and Technology Department of the National Cable and Telecommunications Association, Inc. ("NCTA"). On behalf of the cable industry, I am responsible for analyzing and evaluating technical and engineering issues that arise in federal regulatory and legislative proceedings. I also represent the industry in standards and specifications development organizations in furtherance of public policy objectives, particularly in the areas of cable system architecture and design, field engineering and operations.

2. I joined the cable industry in 1978. Over the past 25 years, I have held a number of positions in cable companies, including headend technician, senior electronic technician, telecommunications services engineer, and technical operations manager. These positions have provided me with extensive experience and background in engineering and deployment of advanced communications services to residential, business, and governmental cable customers.

3. I serve on the Board of Directors of the Advanced Television Systems Committee ("ATSC"). I also am a member of the Institute of Electrical and Electronics Engineers ("IEEE") and the Society of Cable Telecommunications Engineers ("SCTE"), serving as an advisor to SCTE's Engineering Committee. I hold an AA degree in Electrical Engineering, a BS degree in Information Technology, and an MS degree in Computer Science. I also hold technical certifications from various organizations.

4. I have been asked by Insight Communications Company, Inc. to address the technical and operational implications of offering cable program services to customers on an unbundled, a la carte basis. This may involve pure a la carte, i.e., offering every programming service on the expanded basic tier on a stand-alone basis, or themed-tiers of programming comprised of a small select group of channels packaged together. Either form of a la carte would have major technical, operational and economic ramifications for cable systems.

5. Before I discuss implementation of a la carte, there are several basic facts and assumptions that should be stated at the outset. The cable industry has upgraded and expanded its infrastructure and deployed digital compression technology in order to offer its customers a variety of new video and non-video services. The typical upgraded 750 MHz cable system allocates 550 MHz (or 78 channels) for analog program services, including broadcast stations, cable program networks, public, educational and governmental (PEG), and leased access channels. These channels are delivered "in the clear" or unscrambled to the home and customers with cable-ready television sets receive them without the need for a set-top box. The remaining 200 MHz is used for a range of digital services, including digital video programming tiers, premium networks, video-on-demand, high definition, high-speed Internet access, interactive services, music channels, and telephony. These services are encrypted and require the use of a digital set-top box or a new CableCable-enabled digital television set (except high-speed Internet which requires a cable modem).

6. The U.S. cable industry serves nearly 74 million customers, the majority of which – almost 51 million – still receive cable programming services in analog. Approximately 22.9 million customers subscribe to digital cable services. Even in those households that have subscribed to digital cable service and have a digital set-top box, the customer receives broadcast basic and expanded basic channels in analog format. Moreover, the television sets in those households that do not have a digital set-top box receive all of the services in analog.

7. Under an a la carte regime, it is assumed that the channels that would be made available on an a la carte basis are the analog channels on the expanded basic tier and the non-premium digital channels. The basic tier channels, i.e., terrestrial broadcast stations and PEG channels, would continue to be delivered in analog in order to ensure that all cable customers may receive them and would not be available on an a la carte basis.

Technical Approaches to Implementing A La Carte

8. There are theoretically two approaches to implementing a la carte in a cable system:

a. Use traps to block certain analog programming services, enabling the operator to isolate and make available only those analog programming services desired by customers in each household, or

b. Convert the analog channels on the expanded basic tier to digital, and use digital set-top box equipment on television sets and other devices.

Each approach is discussed below.

9. **Install traps to block certain channels**

a. A "trap" is a physical device used to filter out unwanted analog channels. Traps are installed by the cable operator at the customer's service drop outside the home in order to block the receipt of a particular channel or channels. The cable customer only receives the analog channels that they desire and are authorized to receive.

b. In those cable systems that use traps, the operator typically deploys no more than two or three traps per household. This is because there are several technical and operational issues associated with the use of traps. First, traps introduce signal loss into the customer's service drop that may significantly degrade the video and audio quality of all channels. This may in turn affect the operator's ability to maintain compliance with FCC signal level regulations. In addition, the performance level of traps may drift over time and in response to temperature fluctuations, resulting in the degradation of other adjoining channels.

c. Second, there is the issue of service reliability where a significant number of traps are needed to block out multiple channels. These traps must be physically connected to each other in order to maintain signal continuity throughout the entire channel line-up. This scenario creates a situation where there are many connections in the customer's service drop, thereby reducing the mechanical integrity of the drop system and possibly causing the entire drop system to fail. In addition, the large number of connections increases the probability that the customer's drop system will leak RF energy and cause interference into other communications systems (in violation of FCC regulations), and substantially reduce the quality and reliability of service to other cable customers. Furthermore, certain pedestals and apartment lock boxes cannot house a large number of traps.

d. Third, traps are easily tampered with and defeated by those who wish to steal cable service. The wide-scale deployment of traps would exacerbate existing theft of service problems and make it even more difficult for the cable operator to prevent such activity.

e. For all of these reasons, operators limit the number of traps deployed at a customer's home.

f. In an a la carte environment, the technical issues associated with traps would multiply many times over. With 50 or more analog channels for the customer to choose from on the typical expanded basic tier, a trap could potentially be required for each of the expanded basic channels that a customer does not desire. This would require a cable operator to create a unique channel configuration for each of the millions of households that choose a la carte. Moreover, tens of thousands, even millions, of customers in a given system are likely to request a change in their a la carte selection at some point. Every time a customer wanted

to add, subtract, or substitute program services, the cable operator would have to send a technician to the customer's house to tailor the system to meet their specific request. Reconfiguring the channel line-up on a house-by-house basis is unworkable.

g. Apart from the technical issues, it would be very expensive to implement a customized system of traps on a household-by-household basis. The cost of a trap is estimated to be between $3 and $15, depending on whether it filters a single channel or multiple channels (a so-called band filter). Since the installation or removal of traps requires a cable technician, cable systems would need to hire many more field staff to support an a la carte approach, with an estimated average of $45 per truck roll.

h. In summary, the use of traps to facilitate a la carte is neither technically nor operationally feasible and would be virtually impossible to accomplish in an effective manner.

10. Convert analog channels to digital and use digital set-top boxes on television sets and other equipment

a. The second approach to implementing a la carte is to deploy set-top box equipment on each TV set in the cable household. This could be done under one of two scenarios: (1) create an all-digital platform or (2) duplicate all of the analog expanded basic tier channels on the digital tier. (The analog basic tier would remain the same.) A third approach – scrambling analog channels (which are generally unscrambled today) to control access to particular services desired by a customer – is not feasible because digital set-top boxes deployed today do not have analog descrambling circuitry and stand-alone analog descrambling equipment is no longer manufactured.

b. The cost to implement a la carte in a digital environment is enormous under either an all-digital or duplicated analog-to-digital approach. The following outlines the costs associated with each scenario, including headend, customer service and billing system expenses.

c. Scenario 1: An all-digital environment

1. Under this scenario, it is assumed that all analog expanded tier channels are turned off, and that all channels (other than the basic tier) are only available in a digital format. Every analog television set in the customer's home would need a digital set-top box or the customer would need a CableCARD-enabled digital television set. This approach would require an enormous economic investment in set-top boxes by cable operators which would ultimately be borne by customers.

2. A conservative sample calculation shows the cost to provide digital set-top boxes for all television receivers connected to cable within cable homes to be approximately $33.8 billion:

   Average cost of digital set-top box = $185
   Number of cable households currently with set-top boxes = 22.9 million
   Number of cable households needing set-top boxes = 50.9 million
   Average number of TVs per household = 2.5

3. The cost for digital set-top boxes = (22.9 million x 1.5 x $185) + (50.9 million x 2.5 x $185) = $29.9 billion. The total cost to install 161.6 million set-top boxes would be $3.9 billion, assuming an average install cost of $53 per household. Moreover, the total cost could be significantly higher, given the proliferation of VCRs and VCR-like products in customers' homes, raising the average number of devices requiring digital set-top boxes to much greater than 2.5.

4. While some cable companies are experimenting with an all-digital platform, most cable systems will continue to meet their customers' needs by delivering services through a combination of analog and digital technology for the foreseeable future.

d. Scenario 2: Duplicating analog channels on digital tier

1. Under this scenario, it is assumed that all analog expanded tier channels remain turned on, and these channels are duplicated on the digital tier. (Basic tier channels would continue to be delivered only in analog) Facilitating a la carte through this method requires the following: (1) a trap would have to be installed to filter out the analog expanded basic tier; (2) a digital set-top box or CableCARD-enabled digital television set would be needed to select the a la carte channels; (3) the a la carte channels would be viewable solely on the digital tier. Existing digital customers could use their digital set-top box equipment to receive a la carte channels. However, customers with analog cable-ready TVs that choose a la carte would need to obtain a digital set-top box in order to receive the service.

2. The cost to add digital set-top boxes will be dependent upon the number of customers that would want a la carte:

   Average cost of digital set-top box = $185
   Average cost of trap = $8
   Number of cable households currently with set-top boxes = 22.9 million
   Number of cable household needing set-top boxes = 50.9 million
   Average number of TVs per household = 2.5

4. The cost for digital set-top boxes = $185 x (number of customers requesting a la carte). A trap is also required to block the analog expanded basic channels for homes that elect a la carte. The cost to install the set-top box and trap in this scenario is estimated to be $53 per household. For example, if 10% of customers without digital set-top boxes today request a la carte, then the cost will be = 193 x (10% x 50.9 million) = $982 million. Similarly, if 50% of customers without set-top boxes request a la carte, then the set-top box costs are $4.9 billion. The cost of equipment would be passed on to the customer.

11. Headend costs

a. In addition to the enormous set-top box costs, the process of converting the analog channels for carriage on the digital tier will require significant equipment upgrades at the cable headend. Every channel moved or duplicated from the expanded analog basic tier to the digital tier would need its own digital encoder to convert the service from analog to digital. The operator would also have to install additional multiplexers and QAM modulators to ensure that the services can be distributed over the cable system. Operators also would have to maintain at least the existing analog ad insertion capabilities.

b. A simple example shows the cost to upgrade a single headend to encode 50 analog channels to be approximately $572,500, assuming there is only one advertising zone and existing analog ad insertion equipment is reused:

Number analog channels to encode = 50
Cost of digital encoder = $10,000
Number of 6 MHz channels needed = 5
Number of channels per digital multiplex = 12
Number of digital multiplexers needed = 5
Cost per digital multiplexer = $10,000
Number of QAM needed = 5
Average cost per QAM (including encryption) = $4,500

c. The cost to convert 50 channels of analog to digital = (50 x $10,000) + (5 x $14,500) = $572,500. Assuming 9,520 cable headends in the US, and a 10% project engineering and labor cost, the total cost to the industry reaches approximately $6 billion.

d. In addition, these cost examples do not consider the fact that many headends have multiple geographic advertising zones which would require additional encoders, digital multiplexers and QAM modulators to convert additional analog channels containing advertisements targeting a specific portion of the cable system to a digital channel. Nor do they include the additional set-top box controller hardware and software or return path receiving equipment replacements or upgrades that would likely be necessary to support the large increase in the

number of digital set-top boxes that would be deployed to support a la carte. Today, this equipment is set up to authorize service to set-top boxes based on tiers and is typically limited to a hundred or so. Furthermore, the additional equipment will likely require more floor space. A typical cable operator could be in the position of needing to construct additional headend space, and incur additional costs for electrical power, heating and air conditioning.

12. Spectrum capacity costs

a. Cable operators have spent billions of dollars to upgrade and expand their plant and facilities to accommodate a range of new services. Duplicating the analog expanded basic tier channels on the digital tier would occupy a significant portion of cable's digital capacity. Today, this capacity is used for digital programming, premium programming, high-definition services, video-on-demand, high-speed data services, circuit-switched and VoIP telephony services.

b. In the above example, assuming 50 analog channels are duplicated on the digital tier, it would take at least five 6 MHz slots in the digital spectrum to accommodate these channels in the digital tier. This assumes that 10 to 12 standard definition digital channels will be compressed into one 6 MHz analog channel. In order to accommodate a la carte, the cable operator would have to remove from the system or delay deployment of digital video and non-video services that cable customers desire in order to make room for services that are already available on the analog expanded basic tier.

13. Customer service costs

a. A la carte also would have a major impact on cable's customer service systems. Today, cable systems handle hundreds of millions of calls per year from customers purchasing new services, changing existing service, inquiring about billing or requesting service visits. Making cable program services available to customers on an a la carte basis would result in a significant increase in the number and duration of calls to Customer Service Representatives ("CSRs").

b. For example, an average monthly call-in rate for customers regarding cable programming products is as high as 30%. Based on 1 million customers, this equates to an annual call volume of 3.6 million calls. If a la carte is launched, this would result in an annual call volume increase of up to 25%, or an incremental call volume of 900,000 calls in the first year of a la carte availability. Given an average time per call of up to 6 minutes, and the call cost per minute of approximately $0.70, the annual incremental customer service costs incurred by the cable operator would total $3.8 million per 1 million customers. Moreover, the cost is compounded by the fact that the CSR is likely to spend more than 6 minutes with an a la carte customer explaining the numerous service options.

14. Billing system and backend office costs

Operators would have to totally revamp their order taking and billing systems and other business procedures to support a complex a la carte system. Cable ordering and billing systems are optimized for CSRs to handle calls primarily for packages of services billed for on a monthly basis. With a preset number of service options, CSRs are easily able to process customer orders (or change orders) in a prompt, and efficient manner. With ever-changing variations in customer orders in an a la carte environment, current systems are not capable of handling such complexity and would likely require software and code upgrades. Moreover, the human resources that would be needed to support and maintain an a la carte billing and pricing system would be enormous.

15. Themed-Tier Programming

a. If a la carte took the form of themed-tiers of programming, where a small number of selected channels in the existing expanded basic tier would be grouped together to comprise a service offering, largely the same technical and operational issues would arise as under pure a la carte. Traps and/or digital set-top boxes would be needed to create and support the themed-tier approach.

b. The cable operator may be able to reduce the number of traps involved and possibly lower costs if the channels to be filtered were grouped consecutively. However, channel moves have proven historically to be very disruptive to customers. In addition, once the cable operator has committed to the necessary channel line-up changes to facilitate a more advantageous use of traps, the operator would be unable to make future channel modifications without potentially replacing all existing traps installed in the field. Any installation or de-installation of traps requires a truck roll and work by a cable technician in the field. Moreover, many of the technical problems described under a la carte apply to the themed-tier approach.

c. The enormous cost of deploying digital set-top boxes for television sets would be the same under a themed-tier approach as with pure a la carte.

d. Cable systems also would incur associated costs with additional headend equipment, revamping their ordering and billing systems, handling increased call volume and operational issues.

16. In summary, a la carte has enormous costs associated with it in terms of the deployment of set-top box equipment, significant headend upgrades, spectrum costs, customer service and other operational ramifications. It is also important to note that costs associated with a la carte would be shared by all cable customers in a given cable system, not just those who choose to take program services on an a la carte basis.

17. I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information and belief.

/s/ Andy Scott
Andy Scott
Senior Director of Engineering
National Cable & Telecommunications Association

Executed on: July 14, 2004